

How to use the Fuel Comparison Chart

Maine citizens are fortunate to have a large number of fuels to choose from for heating their homes. However, these fuels are measured in different units, making cost comparison difficult. For instance, electricity is sold by the kilowatt hour, fuel oil is sold by the gallon and wood is sold by the cord. In addition, the efficiency that these fuels are burned at varies greatly with equipment design and condition. The chart on the reverse side will enable you to compare the cost of various heating fuels according to their "heating equivalent cost" as expressed in dollars per million BTU (\$/MBTU). To use the chart, find the fuel and efficiency combination you are interested in, in the left hand column, then read across until you find the cost per unit of that fuel. (If you are unsure of the efficiency of a particular piece of heating equipment, contact a local dealer or your nearest Energy Extension Agent for help) From that point, read either straight up or down (which ever is closer) to the "heating equivalent cost" line, to determine cost of that fuel per million BTU (MBTU).

For example, you might want to know how the cost of heating with wood compares with the cost of heating with oil. Wood is available locally for approximately \$240.00/cord and you would be burning it in an air tight woodstove with an efficiency of 50%. Oil is available for \$2.25/gallon and you would be burning it a heating system that had an efficiency of 85%. Which is a better buy? Looking down the right hand column, find "Wood \$/128 cft (Std. Cord) 6,200 Btu/lb @ 20% moisture". Follow that row across until you come to \$241.80/cord (Approximately \$240.00/cord). Read straight up from that point to the "Heating Equivalent \$/MMBTU" row to determine that at \$241.80/cord and 50% efficiency, burning wood costs \$23.40/MBTU. To see how fuel oil compares, read down the right hand column until you come to "#2 Fuel Oil and

Diesel Fuel \$/Gal. (129,000 Btu/Gal.)". Follow that row across to find \$2.22/gallon (approximately \$2.25/gallon) and read straight up from that point to the "Heating Equivalent \$/MMBTU" row to determine that, at that price and efficiency, #2 fuel oil costs \$20.48/MBTU. At these costs and efficiencies, fuel oil is a better deal than wood.

Look at the Big Picture - If you are considering switching to a different heating fuel, be sure to figure in the cost of the heating equipment. If the difference between the heating equivalent costs are small, it may take many years of fuel savings to pay for installing new heating equipment. Also, remember that many fuels have incidental costs associated with them, such as the cutting and splitting of firewood or the annual cleaning and servicing of oil fired equipment. Environmental damage caused by the production, transportation, or use of the fuel is another cost that the chart does not address.

Finally, the best way to lower your heating cost is to make your home more energy efficient. Reducing infiltration and adding insulation will not only make your home more comfortable, it will reduce your fuel consumption. This reduced consumption has at least three major benefits. First, it reduces your heating costs. Second, it lessens the impact of annual price fluctuations by reducing the amount of fuel you need to buy during the heating season, when prices are at their peak. Third, it reduces the pollution that results from the burning of all fuels.

If you need additional information, contact the Maine State Energy Program at the Maine Public Utilities Commission at (207) 287-3349 or visit the web site: <http://www.maine.gov/msep>.

Comparing Heating Fuel Costs



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Heating Fuel Equivalent Cost

Heating System Efficiency														
100%	11.70	14.63	17.55	20.48	23.40	26.33	29.25	32.18	35.10	38.03	40.95	43.88	46.80	Heating Equivalent \$/MMBTU
100%	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	Electric Resistance \$0.01/kWh (3,413 Btu/kWh)
200%	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00	24.00	26.00	28.00	30.00	32.00	Heat Pump (Air Source) \$0.01/kWh (3,413 Btu/kWh) COP 2
350%	14.00	17.50	21.00	24.60	28.00	31.60	35.00	38.60	42.00	45.60	49.00	52.60	56.00	Heat Pump (Earth Source) \$0.01/kWh (3,413 Btu/kWh) COP 3.5
92%	1.08	1.34	1.62	1.88	2.16	2.42	2.70	2.96	3.24	3.50	3.78	4.04	4.30	Natural Gas \$/Therm High Efficiency (100,000 Btu/Therm)
80%	0.94	1.17	1.41	1.64	1.88	2.11	2.35	2.58	2.82	3.05	3.29	3.52	3.75	Natural Gas \$/Therm Low Efficiency (100,000 Btu/Therm)
80%	1.26	1.58	1.90	2.22	2.54	2.86	3.15	3.47	3.79	4.11	4.43	4.75	5.05	#1 Fuel Oil (Kerosene) \$/Gal. (135,000 Btu/Gal.)
80%	1.29	1.63	1.95	2.27	2.61	2.93	3.25	3.59	3.90	4.24	4.56	4.88	5.22	#2 Fuel Oil and Diesel Fuel \$/Gal. (139,000 Btu/Gal.)
80%	0.83	1.06	1.27	1.48	1.68	1.89	2.10	2.31	2.51	2.72	2.93	3.14	3.37	Propane \$/Gal. (92,000 Btu/Gal.)
92%	1.00	1.24	1.48	1.74	1.98	2.24	2.48	2.74	2.98	3.24	3.48	3.74	3.96	Propane \$/Gal. High Efficiency (92,000 Btu/Gal.)
75%	0.56	0.70	0.86	1.00	1.14	1.28	1.42	1.56	1.70	1.84	1.98	2.12	2.28	Methanol \$/Gal. (64,700 Btu/Gal.)
75%	0.60	0.74	0.88	1.04	1.18	1.32	1.46	1.62	1.76	1.90	2.06	2.20	2.36	Ethyl Alcohol 160 Proof \$/Gal. (67,200 Btu/Gal.)
75%	0.66	0.84	1.00	1.16	1.34	1.50	1.66	1.84	2.00	2.16	2.34	2.50	2.66	Ethyl Alcohol 180 Proof \$/Gal. (75,600 Btu/Gal.)
75%	0.74	0.92	1.10	1.30	1.48	1.66	1.86	2.04	2.22	2.40	2.60	2.78	2.96	Ethyl Alcohol 200 Proof \$/Gal. (84,000 Btu/Gal.)
75%	1.06	1.32	1.60	1.86	2.12	2.40	2.66	2.92	3.18	3.46	3.72	4.00	4.24	Gasohol (90/10) \$/Gal. (120,900 Btu/Gal.)
75%	1.08	1.36	1.64	1.90	2.18	2.46	2.72	3.00	3.26	3.54	3.82	4.08	4.36	Gasoline Unleaded \$/Gal. (124,000 Btu/Gal.)
70%	1.06	1.32	1.60	1.86	2.12	2.40	2.66	2.92	3.18	3.46	3.74	4.08	4.26	Vegetable Oil \$/Gal. (130,000 Btu/Gal.)
65%	137.12	171.40	205.68	239.96	274.24	308.52	342.80	377.08	411.36	445.64	479.92	514.20	548.48	Sunflower Oil Meal \$/Ton (9,000 Btu/lb)
65%	123.40	154.26	185.12	215.96	246.82	277.68	308.52	339.38	370.22	401.08	431.94	462.78	493.64	Sunflower Hulls \$/Ton (8,100 Btu/lb @ 8% moisture)
65%	9.14	11.42	13.70	16.00	18.28	20.56	22.86	25.14	27.42	29.70	32.00	34.28	36.56	Sunflower Seeds \$/Cwt. (12,000 Btu/lb @ 8% moisture)
65%	3.62	4.54	5.44	6.34	7.26	8.16	9.06	9.96	10.88	11.78	12.70	13.60	14.50	Shelled Corn \$/Bushel (8,500 BTU/lb @ 15.5% moisture)
65%	3.98	4.98	5.96	6.96	7.96	8.94	9.94	10.94	11.92	12.92	13.92	14.92	15.90	HRS Wheat (Grain) \$/Bushel (8,700 Btu/lb @ 13.5% moisture)
65%	3.00	3.74	4.50	5.24	6.00	6.74	7.50	8.24	9.00	9.74	10.50	11.24	11.98	Barley (Grain) \$/Bushel (8,200 Btu/lb @ 12.5% moisture)
65%	114.26	142.84	171.40	199.96	228.54	257.10	285.68	314.24	342.80	371.38	399.94	428.50	457.06	Wheat and Barley Straw \$/Ton (7,500 Btu/lb @ 8% moisture)
50%	120.92	151.12	181.36	211.60	241.80	272.04	302.28	332.52	362.72	392.96	423.16	453.40	483.64	Wood \$/128 cft (Std. Cord) 6,200 Btu/lb @ 20% moisture
65%	100.54	125.70	150.84	175.98	201.12	226.26	251.40	276.54	301.68	326.80	351.94	377.08	402.22	Coal (Lignite) \$/Ton (6,600 Btu/lb @ 12% moisture)